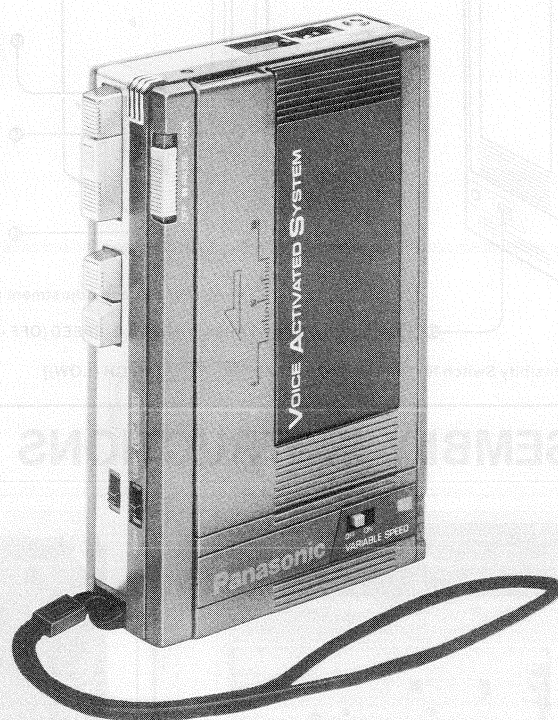


Service Manual

Voice Activated Mini Cassette Recorder
with Tape Speed Control

Mini Cassette
RQ-355
(Brown)



This is the Service Manual
for the following areas.

- D** ...For all European areas except United Kingdom.
- N** ...For Asia, Latin America, Middle East and Africa areas.
- A** ...For Australia.

RQ-352 MECHANISM SERIES

Specifications

Power requirement:

Battery; 3V (Two R6 (UM-3) size dry batteries)

D ...AC; with optional AC adaptor RP-31

NA ...AC; with optional AC adaptor RP-34

Power output:

500mW...RMS (Max.)

Frequency range:

200—8,000Hz

Motor:

Electrical governor motor

Wow and flutter:

Less than 0.5 (RMS)

Tape speed:

4.8cm/s

Track system:

2-track monaural recording and playback

Fast forward and rewind time:

Approx. 140sec. with C-60 cassette tape

Jacks:

Mic; sensitivity 0.25mV/applicable microphone
impedance 200 Ω —600 Ω

DC-in; 3V

Monitor; 8 Ω

4.5cm

85mm(W) \times 134mm(H) \times 33mm(D)

318g without batteries

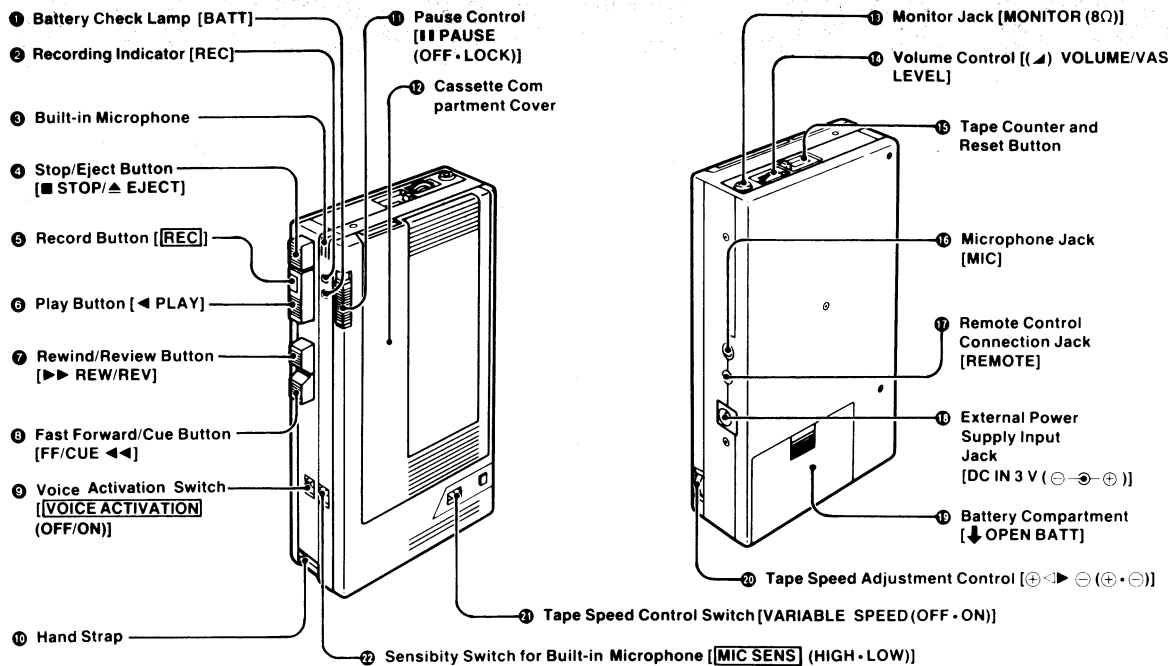
Speaker:

Dimensions:

Weight:

Design and specifications are subject to change without notice.

LOCATION OF CONTROLS AND COMPONENTS



DISASSEMBLY INSTRUCTIONS

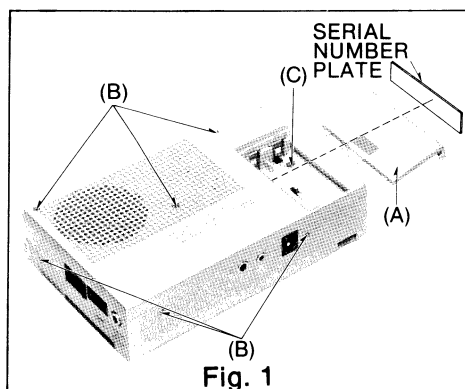


Fig. 1

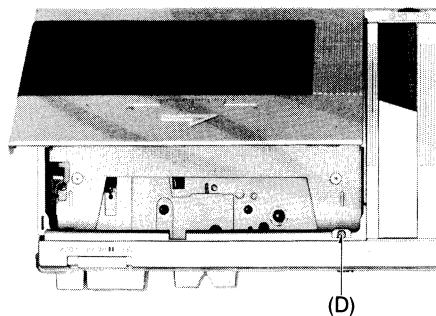


Fig. 2

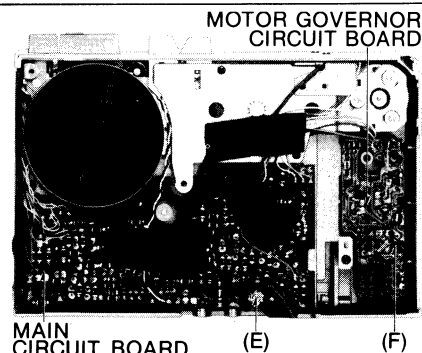


Fig. 3

Ref. No.	Procedure	To remove —.	Remove —.	Shown in fig. —.
1	1	Bottom case assembly	<ul style="list-style-type: none"> • Battery lid(A) • 6 screws(B) • 1 black screw(C) 	1
2	1 → 2	Main case assembly	<ul style="list-style-type: none"> • 1 screw(D) 	2
3	1 → 2 → 3	Main circuit board and motor governor circuit board	<ul style="list-style-type: none"> • 1 screw(E) • 1 red screw(F) 	3

PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

- When checking operation after removing the mechanism unit from the bottom case, the REW button (M64) should come off easily. Tighten it temporarily with a screw G9 (used to stop the bottom case) as shown in Fig. 1 and then check the operation.

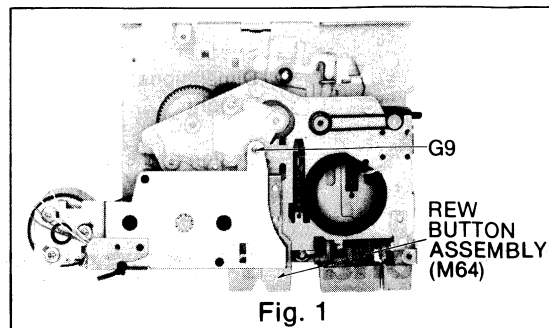
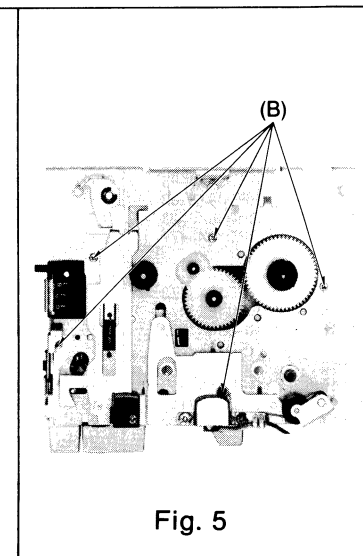
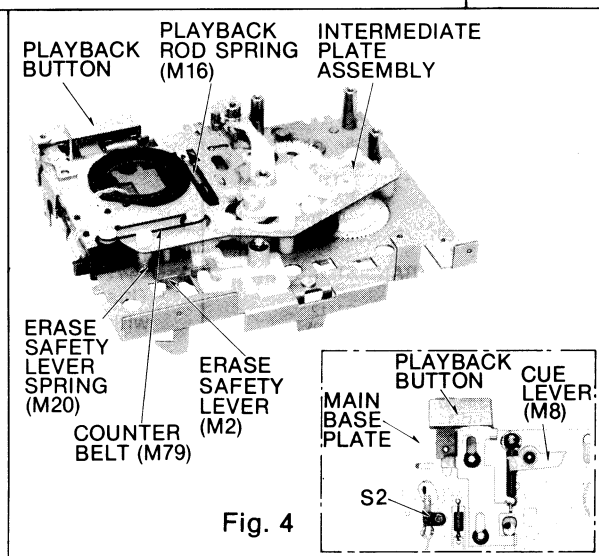
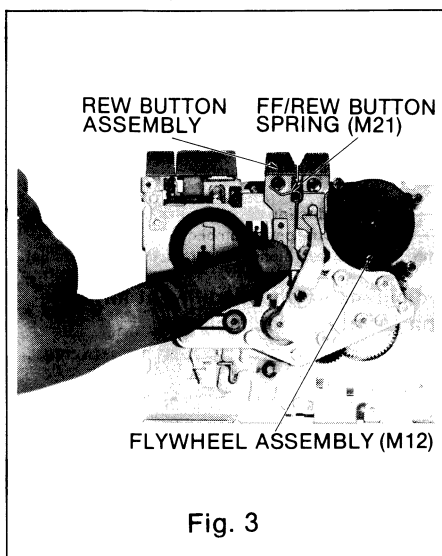
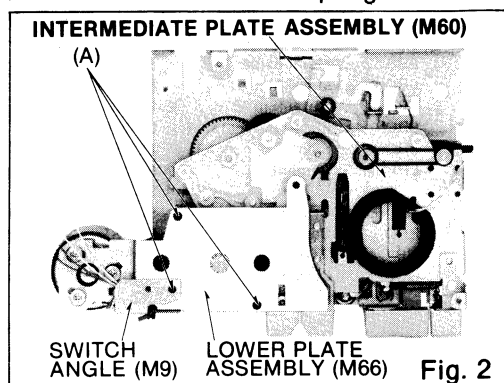


Fig. 1

• Removing the intermediate plate assembly (M60)

- i) Remove three black screws (A) first, then remove the lower plate assembly (M66) and switch angle (M9). Remove them while holding down the REW button assembly (M64) to prevent the FF/REW button spring (M21) from popping out. (Refer to Fig. 1, 2 and 3.)
- ii) Remove the FF/REW button spring and the REW button.
- iii) Remove the erase safety lever spring (M20) from the erase safety lever (M2). (Refer to Fig. 4.)
- iv) Remove the flywheel assembly (M12). (Refer to Fig. 3).
- v) Remove five screws (B), the playback rod spring (M16), and counter belt (M79). The intermediate plate assembly can be removed from the mechanism unit.
- vi) When assembling the intermediate plate assembly, assemble the cue lever (M8) parallel to the edge of the main base plate. Before securing it with screws, insert the erase safety lever spring. (Refer to Fig. 4.)

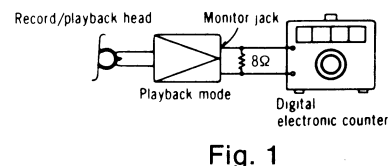


MEASUREMENT AND ADJUSTMENT METHODS

NOTES: Keep good condition, set switch buttons and controls in the following positions, unless otherwise specified.

- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature: 20±5°C (68±9°F)
- Volume control: Set to 8.
- Speed control: OFF
- Voice operation: OFF

ITEM	MEASUREMENT & ADJUSTMENT
A Tape speed accuracy adjustment Condition: * Playback mode Equipment: * Digital electronic counter or frequency counter * Test tape...QZZCWAT * Resistor (8Ω)	Tape speed accuracy 1. Test equipment connection is shown in fig. 1. 2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter. 3. Take measurement at middle section of test tape. 4. Measure this frequency. 5. On the basis of 3,000Hz, determine value by following formula: $\text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100 (\%)$ where, f = measured value <div style="border: 1px solid black; padding: 5px; text-align: center;"> Standard value: ±2.5% (f = 2,925—3,075 Hz) </div> 6. If measured value is not within standard, adjust VR201 (shown in circuit boards and wiring connection diagram), so that frequency becomes 3,000 Hz.
B Adjusting the governor circuit (μ adjustment) Condition: * Playback mode	Checks after motor replacement 1. After replacing the motor, playback the test tape (QZZCWAT) and listen to the reproduced sound. If the sound vibrates or fluctuates, change the resistor (R202) to 1.5 ohms (ERD10TJ1R5). 2. Playback the test tape (QZZCWAT) and check that the reproduced sound does not fluctuate.



ELECTRICAL PARTS LIST

• NOTES: RESISTORS

ERD.....Carbon
 ERG.....Metal-oxide
 ERS.....Metal-oxide
 ERO.....Metal-film
 ERX.....Metal-film
 ERQ.....Fuse type metallic
 ERC.....Solid
 ERF.....Cement

CHIP RESISTORS

RRD.....Carbon

CHIP CAPACITORS

QCU□.....Ceramic

CAPACITORS

ECBA.....Ceramic
 ECG□.....Ceramic
 ECK□.....Ceramic
 ECC□.....Ceramic
 ECF□.....Ceramic
 ECQM.....Polyester film
 ECQE.....Polyester film
 ECQF.....Polypropylene
 ECE□.....Electrolytic
 ECQEN.....Non polar electrolytic
 ECQS.....Polystyrene
 ECS□.....Tantalum
 QCS.....Tantalum

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.
RESISTORS		CAPACITORS		TRANSISTORS	
R 2	RRD18XJ222	C 1	ECEA1HKR22	C 31	ECEA0GKS101
R 3	RRD18XJ682	C 2	QCUT1H101MRL	C 32	ECEA0GKS470
R 4	RRD18XJ472	C 3	QCUT1H222MRL	C 33	QCU1TH101MRL
R 5	RRD18XJ102	C 4	QCUT1H392MRL	C 34	ECEA0GK330
R 7	RRD18XJ123	C 5	ECSF1CD224	C 35	ECEA0GKS221
R 8	RRD18XJ472	C 6	ECEA1HKS010	C 36	ECEA1HK010
R 9	RRD18XJ103	C 7	ECEA0GKS470	C 37	ECEA1HKS47
R 10	RRD18XJ102	C 8	QCUT1H472MRL	C 38	QCUT1H333MRL
R 11	RRD18XJ103	C 9	ECEA0GKS221	C 39	ECEA0GKS470
R 12	RRD18XJ471	C 10	ECEA0GKS101	C 40	QCUT1H472MRL
R 13	RRD18XJ184	C 11, 12	ECEA1HKS010	C 201	ECEA1EK47
R 14	RRD18XJ472	C 13	ECEA1HKS2R2	DIODES & RECTIFIERS	
R 15	RRD18XJ474	C 14	ECEA1HKS010	D 1	SM112
R 16	RRD18XJ223	C 15	ECEA0GKS470	D 2	SLB22UR3
R 17	RRD18XJ562	C 16	QCUT1H223MRL	D 3	SLB22GG3
R 18	RRD18XJ271	C 17	ECSF1CD224	INTEGRATED CIRCUITS	
R 19	RRD18XJ560	C 18	ECEA1HKS2R2	IC 1	BA3410F
R 20	RRD18XJ103	C 19	ECSF1CD224	IC 2	BA5208F
R 21	RRD18XJ222	C 20	QCUT1H102MRL	IC 201	AN6612
R 22	RRD18XJ100	C 21	ECEA0GKS221	JACKS	
R 23, 24	RRD18XJ561	C 22	ECEA1HKR22	J 1	QJA0184
R 25	RRD18XJ182	C 23	ECEA0GKS330	J 2	refer to G12
R 27	RRD18XJ470	C 24, 25	ECEA1HK2R2	J 3	QJA0177
R 28	RRD18XJ821	C 26, 27	ECEA1EK47	J 4	QJA0185
R 29, 30	RRD18XJ8R2	C 28	QCUV1E104ZF	SWITCHES	
R 31	RRD18XJ102	C 29	QCUT1H222MRL	S 1	QSS6225
R 32	RRD18XJ390	C 30	QCUT1H103MRL	S 2	QSB0302
R 33	RRD18XJ224			S 3	QSS1231
R 34	RRD18XJ103			S 4	QSS1229
R 35	RRD18XJ184			S 5	QSS2233
R 36	RRD18XJ274			S 6	QSS1229
R 37	RRD18XJ563				
R 38	RRD18XJ272				
R 39, 40	RRD18XJ221				
R 41	RRD18XJ561				
R 42	RRD18XJ330				
R 201	ERSB39JR30				
R 202	ERD10TJ2R2				
(Adjustable)	ERD10TJ1R5				
R 203	ERSB20J752				
R 204	ERD10TJ102				
R 205	ERD10TJ272				
CHIP JUMPERS					
JP 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	RRD18XK000				
VARIABLE RESISTORS					
VR 1	EVLEAAT12A14				
(with Screw)					
VR 2	QVLCNAA00B5				
(with Speed Control Knob)					
VR 201	EVNB3A00B32				

NOTES:

- S1-1—S1-3Record/playback select switch (shown in playback position).
- S2.....Power ON/OFF switch (shown in OFF position).
- S3.....Pause control switch (shown in LOCK position).
- S4.....MIC sens LOW/HIGH switch (shown in HIGH position).
- S5.....Tape speed control switch (shown in OFF position).
- S6.....Vois operation switch (shown in ON position).
- VR1Volume control.
- VR2Tape speed control
- VR201Tape speed adjustment VR.
- Resistance are in ohms (Ω), 1/8 watt unless specified otherwise.
K = 1,000 Ω
- Capacity are in microfarads (μ F) unless specified otherwise.
P = Pico-farads.

- Described in the schematic diagram are two types of numbers: the supply parts number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.

e.g. Q1

2SC2412LN(R,S)——Production parts number
 or 2SC2405(S,T)

[2SC2412R]——Supply parts number

D2

1SR35200——Production parts number

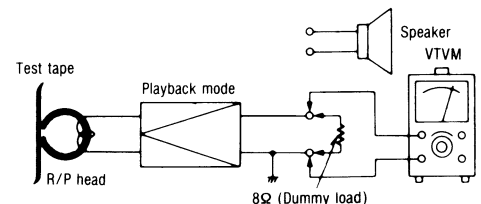
[SM112]——Supply parts number

- The supply parts number is described alone in the replacement parts list.

- This schematic diagram may be modified at any time with the development of new technology.

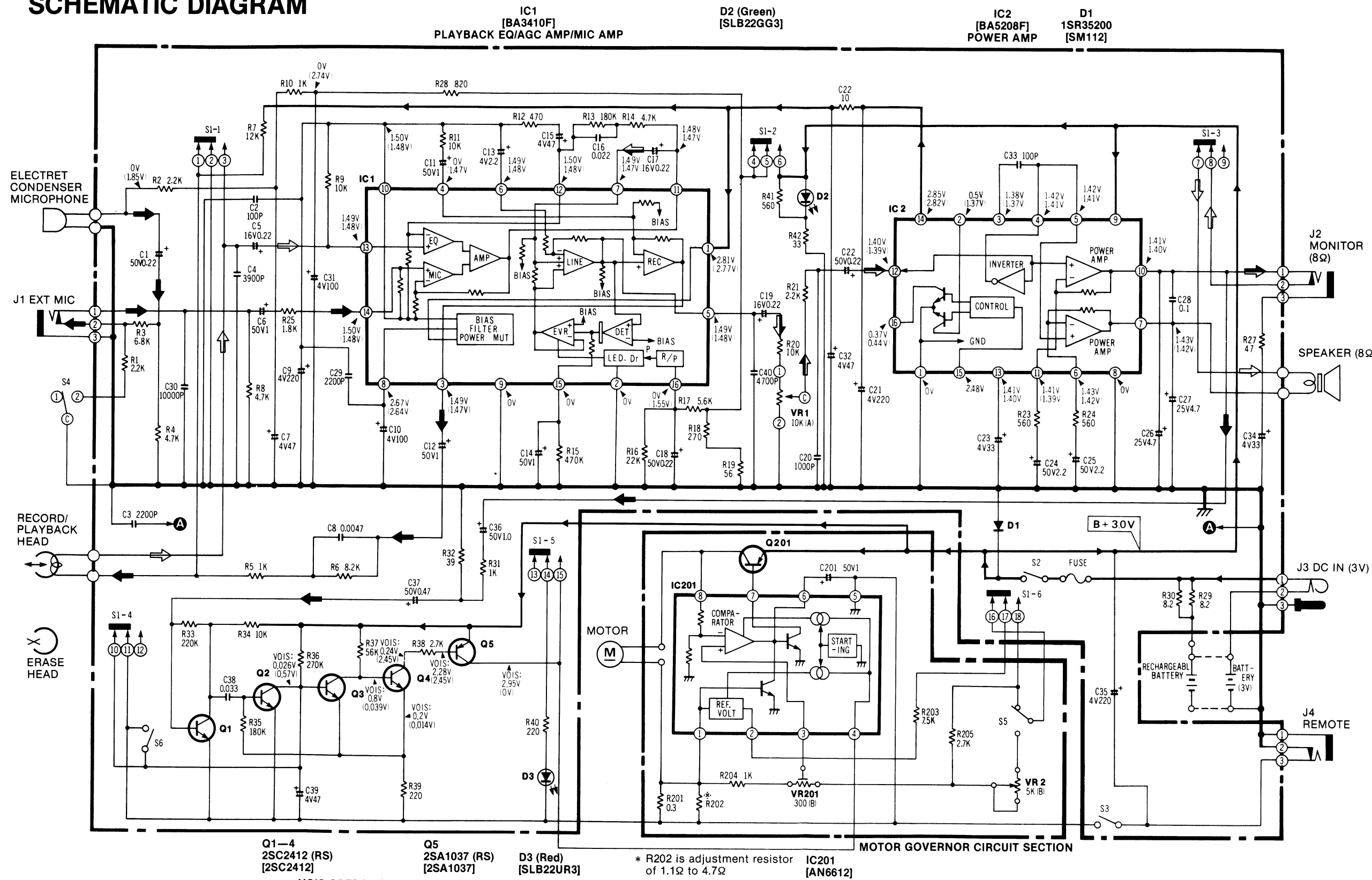
SPECIFICATIONS

Standard recording input level	1 kHz: MIC: $-72\text{dB} \pm 4\text{dB}$
Overall frequency response	250 Hz: $-3 \pm 5\text{dB}$ 1 kHz: 0dB 6 kHz: $-3 \pm 6\text{dB}$
Playback output level * Use test tape ...QZZCFM (315Hz, 0dB)	More than 1.6V



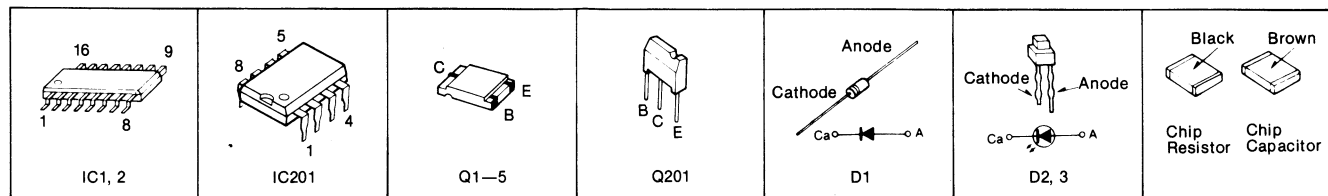
- Notes:** 1. Cut the speaker lead wire.
 2. Connect 8 Ω instead of speaker.

SCHEMATIC DIAGRAM

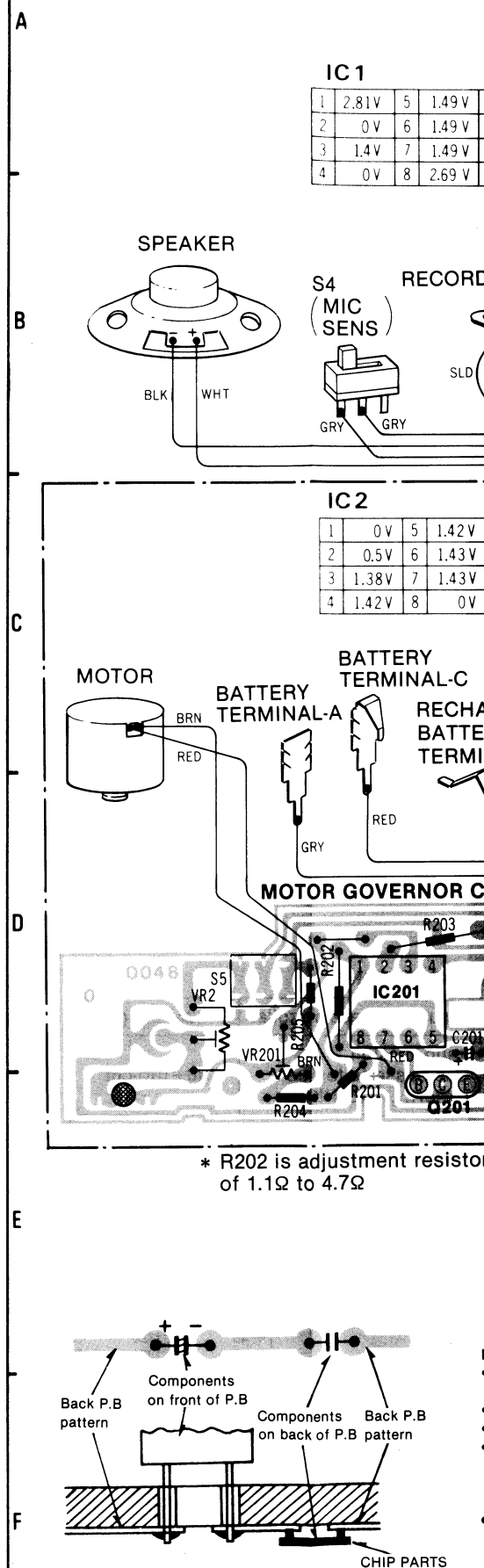


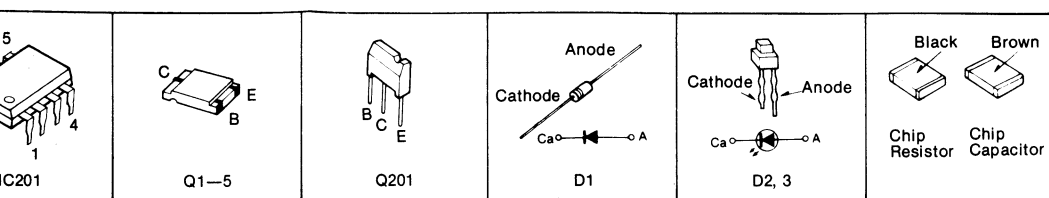
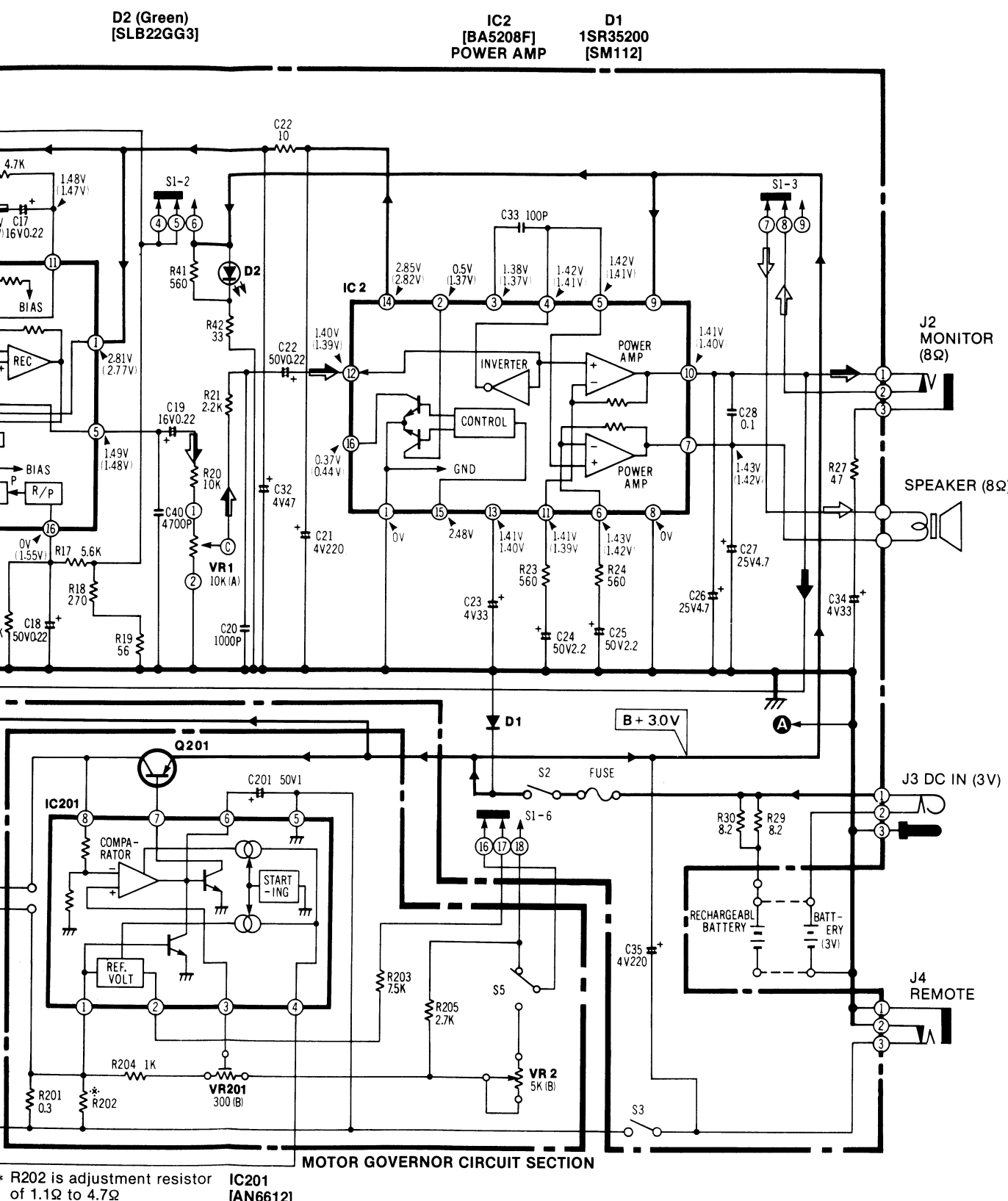
- NOTES:**
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control a maximum position. However, the voltage in record mode is indicated in () when it differs from that in playback mode.
 - VOIS... Voltage values at ON (Voice operation switch) mode. For measurement, use VTVM.
 - () this arrow indicates the flow of the playback signal.
 - () this arrow indicates the flow of the recording signal.
 - () this arrow indicates the flow of the playback and recording signal in compination.

TERMINATIONS

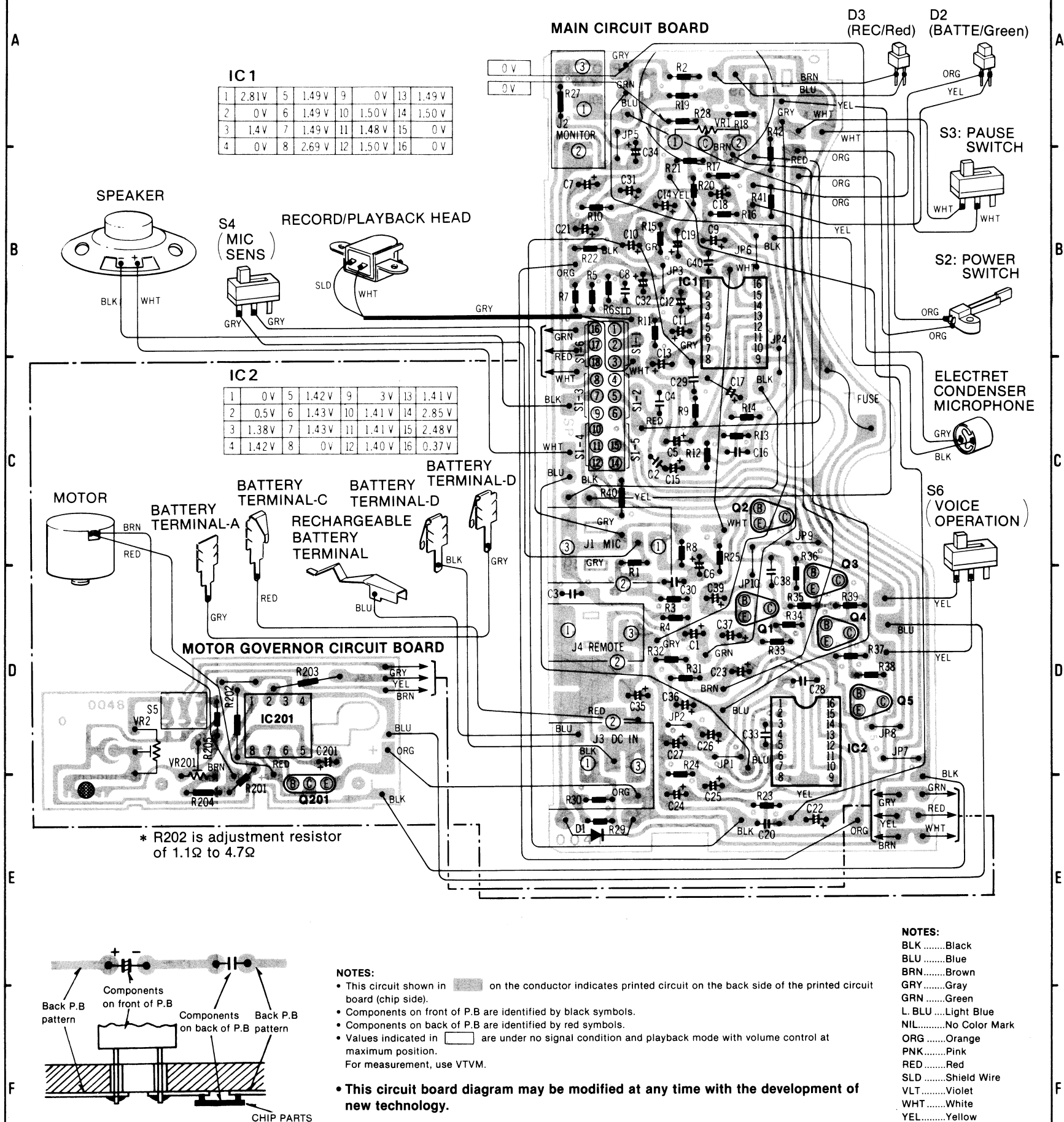


CIRCUIT BOARDS AND



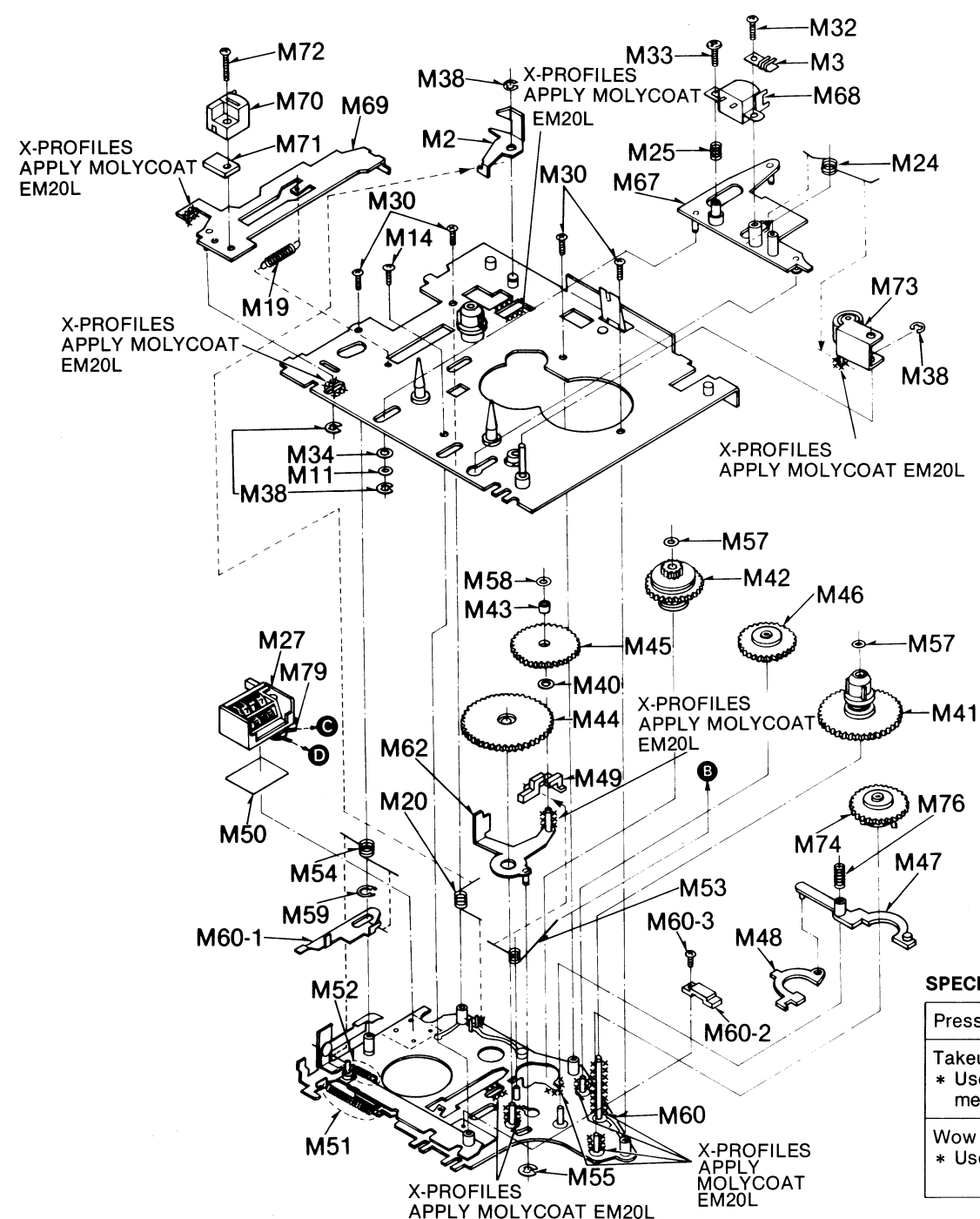


CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

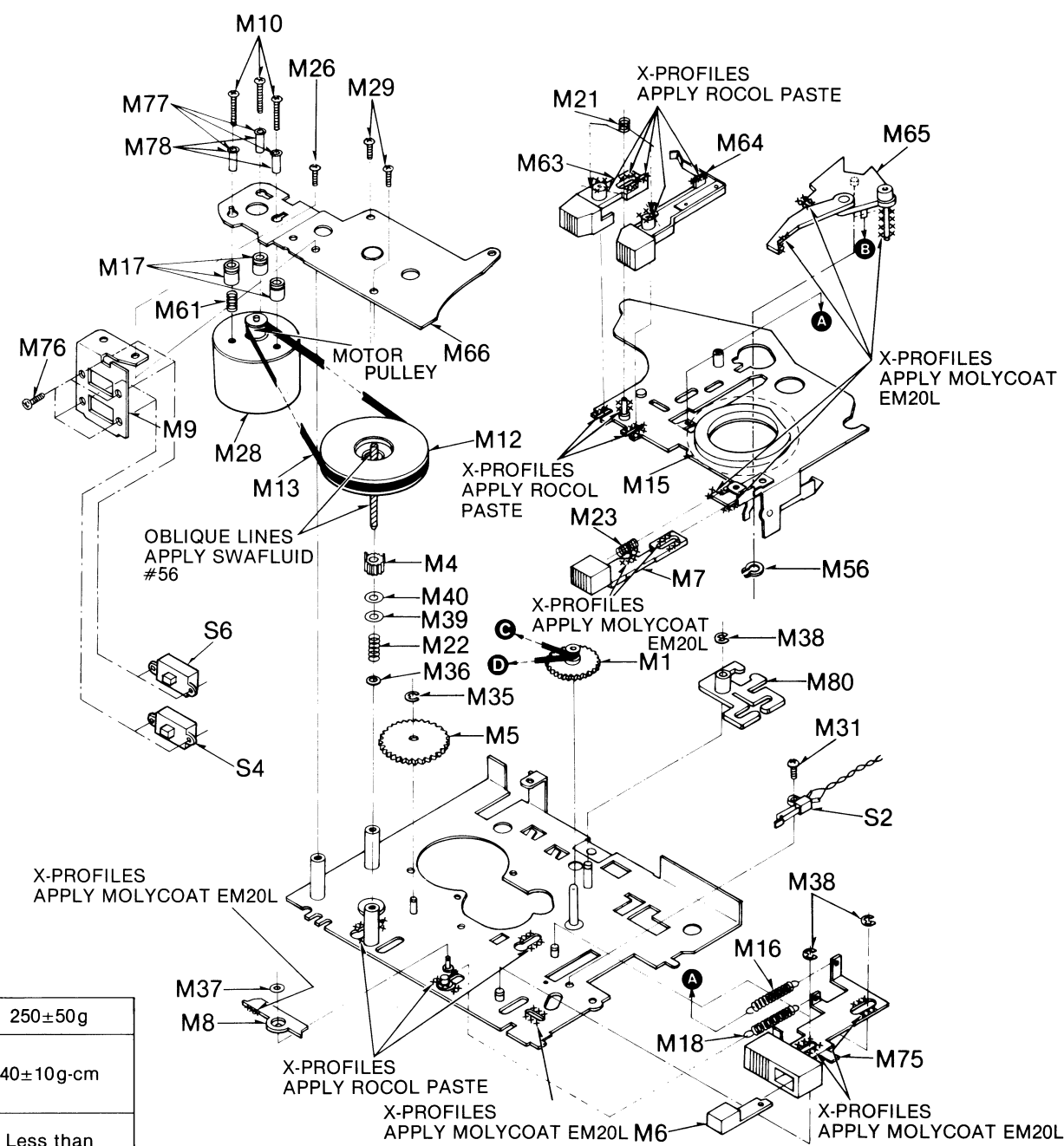


MECHANICAL PARTS LOCATION

(Front View)



(Rear View)



SPECIFICATIONS

Pressure of pressure roller	250±50g
Takeup tension * Use cassette torque meter.....QZZRKCT	40±10g-cm
Wow and flutter: JIS * Use test tapeQZZCWAT	Less than 0.5% (RMS)

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
MECHANICAL PARTS																	
M 1	QDP1977	Supply Reel Pulley	M 14	XQN16C25FZ	Screw $\phi 1.6 \times 2.5$	M 29	XQN16C3FZ	Screw $\phi 1.6 \times 3$	M 43	QMC0155	Spacer (for Gear-(4))	M 57	QBW2030	Snap Washer	M 68	QWY0151Y	Record/Playback Head
M 2	QML4051	Erase Safety Lever	M 15	QBMA0017	Speaker Cushion	M 30	XTNQ16C4D	Screw $\phi 1.6 \times 4$	M 44	QDG1319	Gear-(3)	M 58	QBW2008	Snap Washer	M 69	QXK2813	Erase Head Base Plate
M 3	QTD1326	Head Wire Clamper	M 16	QBT2104	Playback Rod Spring				M 45	QDG1320	Gear-(4)	M 59	XUE35	Stop Ring 3.5 ϕ			Assembly
M 4	QDG1317	Gear-(1)	M 17	QBG1762	Motor Rubber	M 31	XSN2 + 3	Screw $\phi 2 \times 3$	M 46	QDG1321	Gear-(5)	M 60	QXK2809	Intermediate Plate	M 70	QWY2158	Erase Head
M 5	QDG1318	Gear-(2)	M 18	QBT2012	Head Base Plate Spring	M 32	XSN2 + 4	Screw $\phi 2 \times 4$	M 47	QML4054	Auto-Stop Lever-A			Assembly	M 71	QMG0126	Erase Head Base
M 6	QGO2280	Record Button	M 19	QBT2015	Erase Head Base Plate	M 33	XSB2D45	Screw $\phi 2 \times 4.5$	M 48	QML4055	Auto-Stop Lever-B				M 72	XSN2 + 8	Screw $\phi 2 \times 8$
M 7	QGO2281S	Stop Button			Spring	M 34	XWE3A7	Washer	M 49	QML4060	Auto-Stop Safety Lever				M 73	QXL1677	Pressure Roller Lever
M 8	QML4059	Cue Lever	M 20	QBN2014	Erase Safety Lever Spring	M 35	XUC15FT	Ring 1.5 ϕ	M 50	QGAA0024	Counter Adhesive Angle						Assembly
M 9	QMA6470	Switch Angle (for S4 and S6)				M 36	QBW2102	Washer				M 60-1	QML4053	Eject Change Lever	M 74	QXG1080	Gear-(5) Assembly
			M 21	QBN2016	FF/REW Button Spring	M 37	QBW2030	Snap Washer	M 51	QBT2013	Lock Plate Spring				M 75	QXR0937	Playback Rod Assembly
			M 22	QBC1479	Flywheel Spring	M 38	XUC2FT	Stop Ring 2 ϕ	M 52	QBT2011	Switch Change Rod				M 76	XSS2 + 3	Screw $\phi 2 \times 3$
			M 23	QBC1477	Stop Button Spring	M 39	QBW2013	Washer				M 61	QBC1475	Spring (for Motor)	M 77	XWE19D5	Washer (for Motor)
			M 24	QBN2013	Pressure Roller Spring	M 40	QBKA0006	Washer	M 53	QBN2015	FF Lever Spring				M 78	QMC0157	Motor Collar
			M 25	QBC1339	Head Adjustment Spring				M 54	QBN2017	Eject Change Lever				M 79	QDB0352	Counter Belt
M 11	QBP1519	Spring Washer	M 26	XQN16C35FZ	Screw $\phi 1.6 \times 3.5$	M 41	QXD0156	Takeup Reel Table				M 62	QXL1678	Gear Lever Assembly	M 80	QML4057	Record Lever
M 12	QXF0229	Flywheel Assembly	M 27	QDC0165	Counter			Assembly	M 55	XUC2FT	Stop Ring 2 ϕ				M 81	QBC1478	Back Tension Spring
M 13	QDB0350	Flywheel Belt	M 28	HDN5A3RB	Motor	M 42	QXG1079	FF Gear Assembly	M 56	XUBQ2FT	Ring C 2 ϕ				M 82	QBC1474	Auto-Lever-A Spring

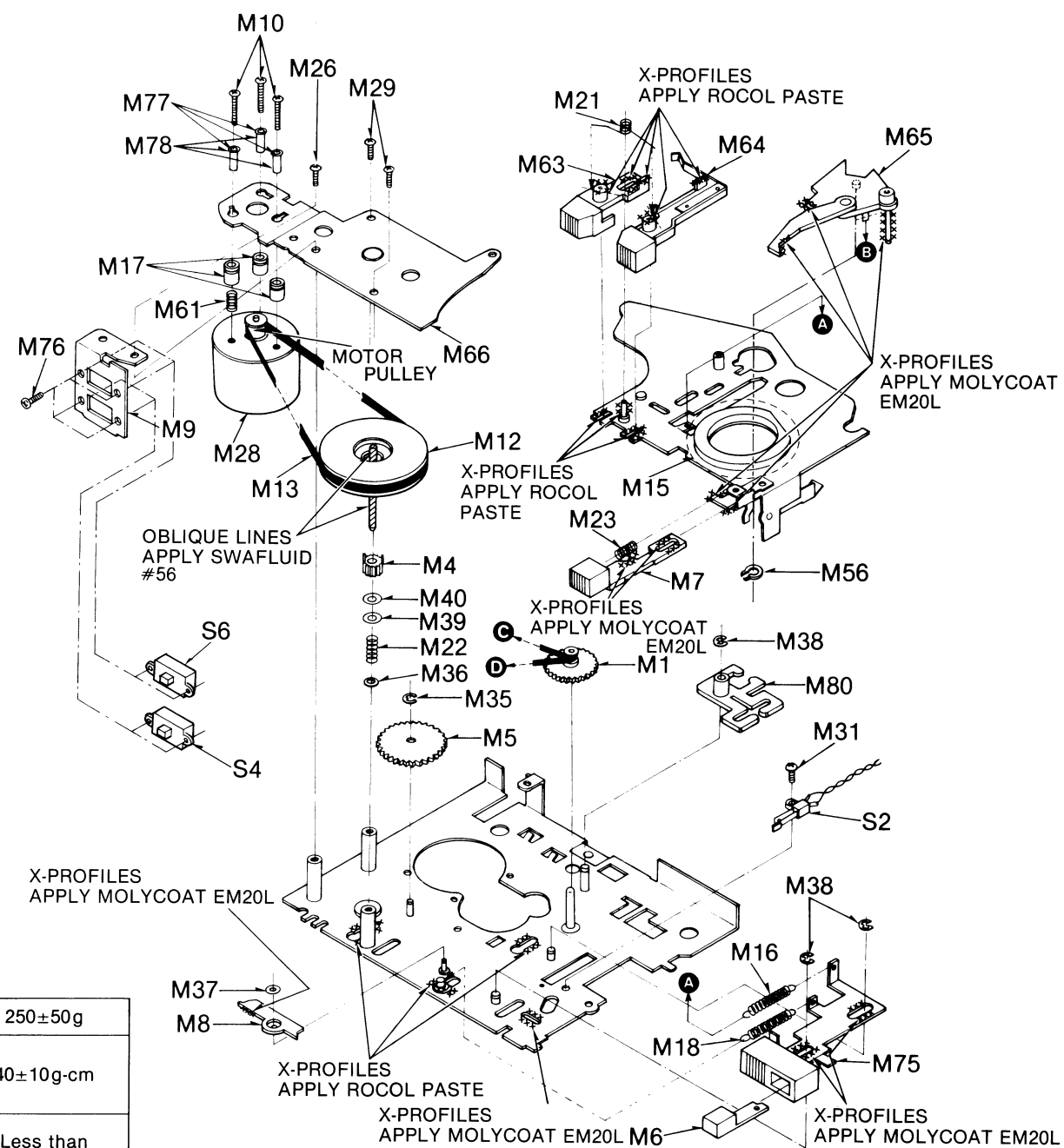
REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
CABI		
G 1	[D] QYMA0204C	Record/Playback Head
	[For all European area]	
	[NA] QYMA0206C	Erase Head Base Plate
	[For Asia, Latin America]	
	[Australia areas.]	
G 1-1	QBP2005	Assembly
G 1-2	XTN2 + 6BFZ	Erase Head
G 2	QYMA0196C	Erase Head Base
G 2-1	QJB0161	Screw $\phi 2 \times 8$
G 2-2	QJB0109	Pressure Roller Lever
G 2-3	QJB0142	Assembly
G 2-4	QJB0147	Gear-(5) Assembly
G 3	QYPA0022	Playback Rod Assembly
G 4	QKFA4005C	Screw $\phi 2 \times 3$
G 5	QGO2284S	Washer (for Motor)
G 6	QMN2859	Motor Collar
G 7	XTN2 + 6B	Counter Belt
G 8	XTN2 + 8BFZ	Record Lever
G 9	XQN16 + C4FN	Back Tension Spring
G 10	QYFA0049	Auto-Lever-A Spring
G 10-1	QBH2037H	

NOTE:

When changing mechanism parts, apply the specified grease to the area marked "xx" shown in the drawing "Mechanical Parts Location".

(Rear View)

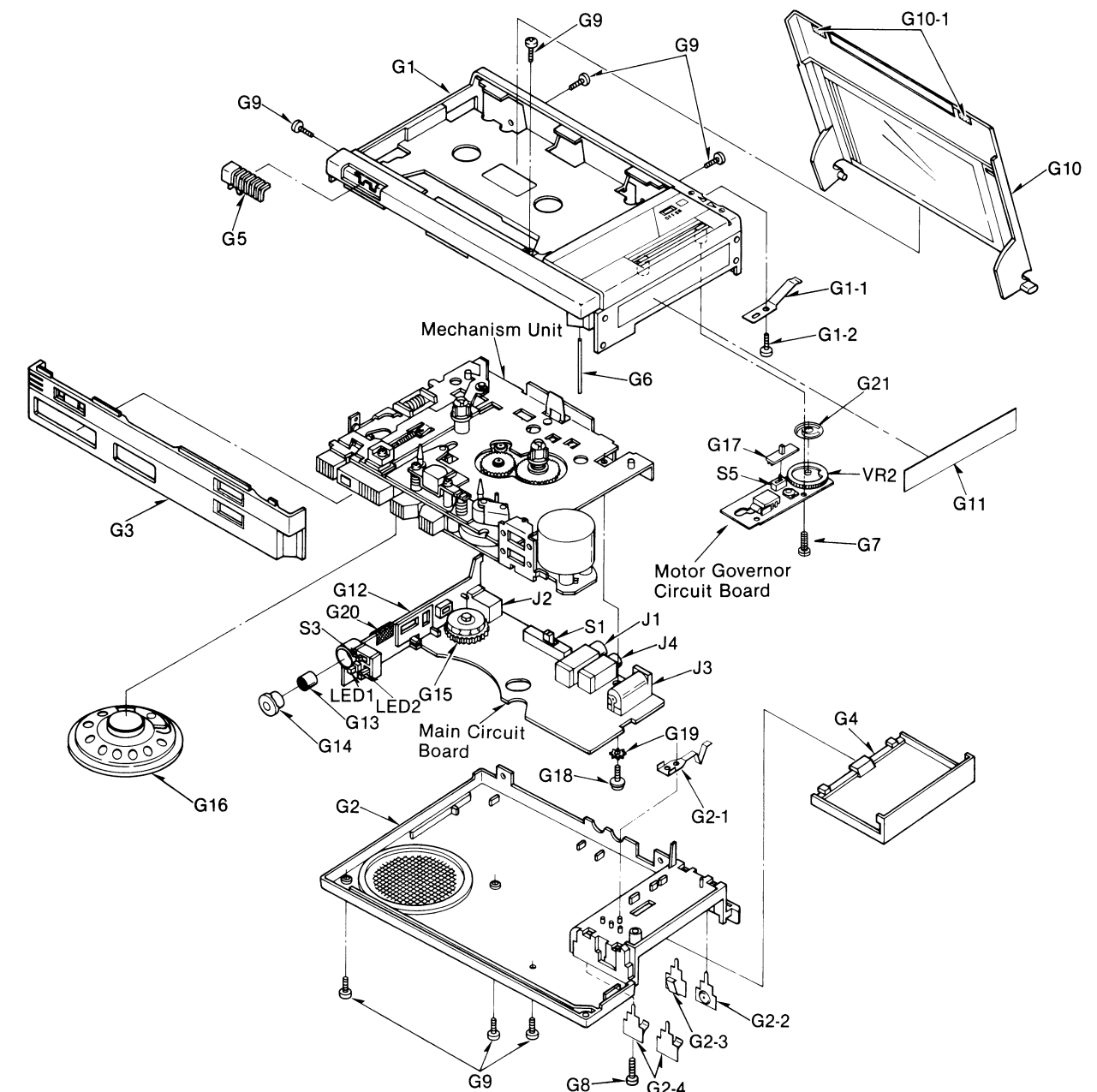


SPECIFICATIONS

Pressure of pressure roller	250±50g
Takeup tension * Use cassette torque meter.....QZZRKCT	40±10g-cm
Wow and flutter: JIS * Use test tapeQZZCWAT	Less than 0.5% (RMS)

Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
Screw $\phi 1.6 \times 3$	M 43	QMC0155	Spacer (for Gear-(4))	M 57	QBW2030	Snap Washer	M 68	QWY0151Y	Record/Playback Head
Screw $\phi 1.6 \times 4$	M 44	QDG1319	Gear-(3)	M 58	QBW2008	Snap Washer	M 69	QXK2813	Erase Head Base Plate
Screw $\phi 2 \times 3$	M 45	QDG1320	Gear-(4)	M 59	XUE35	Stop Ring 3.5 ϕ			Assembly
Screw $\phi 2 \times 4$	M 46	QDG1321	Gear-(5)	M 60	QXK2809	Intermediate Plate			Assembly
Screw $\phi 2 \times 4.5$	M 47	QML4054	Auto-Stop Lever-A						
Washer	M 48	QML4055	Auto-Stop Lever-B						
Ring 1.5 ϕ	M 49	QML4060	Auto-Stop Safety Lever						
Washer	M 50	QGAA0024	Counter Adhesive Angle						
Snap Washer	M 51	QBT2013	Lock Plate Spring						
Stop Ring 2 ϕ	M 52	QBT2011	Switch Change Rod						
Washer									
Washer									
Takeup Reel Table									
FF Gear Assembly									

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
CABINET PARTS			CABINET PARTS			CABINET PARTS		
G 1	[D] QYMA0204C	Main Case Assembly	G 11	[D] QGSA0094	Main Name Plate	A 2	QYH0102K	Handstrap Assembly
	[For all European areas except United Kingdom.]			[For all European areas except United Kingdom.]		A 3	[D] QFKA0070	Carrying Bag
	[NA] QYMA0206C	Main Case Assembly		[NA] QGSA0097	Main Name Plate		[For all European areas except United Kingdom.]	
	[For Asia, Latin America, Middle East, Africa and Australia areas.]			[For Asia, Latin America, Middle East, Africa and Australia areas.]			[NA] QFKA0071	Carrying Bag
	[For Asia, Latin America, Middle East, Africa and Australia areas.]		G 12	QEJA0028	Jack Plate Assembly (with J2: Monitor Jack)		[For Asia, Latin America, Middle East, Africa and Australia areas.]	
G 1-1	QBP2005	Cassette Lid Spring				A 4	[D] QQT3546	Instruction Book
G 1-2	XTN2 + 6BFZ	Tapping Screw $\phi 2 \times 6$					[For all European areas except United Kingdom.]	
G 2	QYMA0196C	Bottom Case Assembly	G 13	WM063Y	Electret Condenser		[NA] QQT3553	Instruction Book
G 2-1	QJB0161	Rechargeable Battery Terminal	G 14	QBG1733	Microphone Rubber		[For Asia, Latin America, Middle East, Africa and Australia areas.]	
G 2-2	QJB0109	Battery Terminal-A	G 15	QGT1360	Volume Knob	PACKINGS		
G 2-3	QJB0142	Battery Terminal-C	G 16	EAS45P106SE	Speaker	P 1	[D] QPNA0185	Inner Carton
G 2-4	QJB0147	Battery Terminal-D	G 17	QGT1651	Switch Knob (for Speed Control)		[For all European areas except United Kingdom.]	
G 3	QYPA0022	Operation Panel					[NA] QPNA0188	Inner Carton
G 4	QKFA4005C	Battery Lid	G 18	XQNQC16A4F	Screw $\phi 1.6 \times 4$		[For Asia, Latin America, Middle East, Africa and Australia areas.]	
G 5	QGO2284S	Pause Switch Button	G 19	XWC2B	Washer 2 ϕ	P 2	XZB16X27A02	Poly Bag (for UNIT)
G 6	QMN2859	Hand Strap Pin	G 20	QBJA0042	Spacer-B	P 3	QPAA0093	Cushion
G 7	XTN2 + 6B	Tapping Screw $\phi 2 \times 6$	G 21	QGBA0039	Volume Indication Plate	P 4	QPSA0036	Pad
G 8	XTN2 + 8BFZ	Tapping Screw $\phi 2 \times 8$				P 5	QPAA0099	Protection Card (for Cassette Lid)
G 9	XQN16 + C4FN	Screw $\phi 1.6 \times 4$	ACCESSORIES					
G 10	QYFA0049	Cassette Lid Assembly	A 1	[NA] QFTC07L003NZ	Demonstration Tape			
G 10-1	QBH2037H	Spacer-A		[For Asia, Latin America, Middle East, Africa and Australia areas.]				

Service Manual

Mini Cassette

RQ-355

(Brown)

Supplement-1

Voice Activated Mini Cassette Recorder
with Tape Speed Control

This is the Service Manual
for the following areas.

Z ...For all European
areas except United
Kingdom.

X ...For Asia, Latin
America, Middle
East and Africa
areas.

L ...For Australia.

- Please use this manual together with the service manual for model No. RQ-355 order No. ARD83080273C8-05.

CORRECTION

■ REPLACEMENT PARTS LIST

Please revise the original parts list in the Service Manual RQ-355 to conform to the changes shown herein.

(Original)

Ref. No.	Part No.	Part Name & Description
G12	QEJA0028	Jack Plate Assembly (with J2: Monitor Jack)

(Correction)

Ref. No.	Part No.	Part Name & Description
J2	QJA0196H	Monitor Jack
G12	QEJA0028	Jack Plate Assembly